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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/899,410

07/23/97

GALLOWAY

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MARGARET M. DUNCAN
MCDERMOTT, WILL & EMERY
227 WEST MONROE STREET
CHICAGO IL 60606

IM22/0508

EXAMINER

DYE, R

ART UNIT

PAPER NUMBER

1772

36

DATE MAILED:

05/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/899,410

Applicant(s)
Galloway et al.

Examiner
Rena L. Dye

Art Unit
1772



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 28, 2001
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-13, 15, 16, and 21 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-13, 15, 16, and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 35
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Art Unit: 1772

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,4-13,15,16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Lai et al. (5,272,36).

Newsome teaches linear low density polyethylene (LLDPE) used in multiple layer molecularly oriented films (Abstract). The film includes a first barrier layer having two opposing surfaces wherein first and/or second pairs of layers are adhered. In preferred structures the first pair of layers comprises 70% to 100% EVA and the second pair of layers comprises 10% to 90% LLDPE. In an embodiment involving a partial reversal of roles, the first pair of layers comprises 50% to 100% LLDPE. The second and third layers, or barrier layer, may comprise an ethylene vinyl acetate (EVA), and the fourth layer comprises 10% to 100% LLDPE (column 2, lines 40 to column 3, line 24). Newsome uses conventional LLDPE, wherein one commercially available material is DOWLEX (column 5, lines 45+). The barrier layer may be ethylene vinyl alcohol copolymer (column 3, lines 25-28). A substantial end use of the film is in heat sealable shrink bags for utilization particularly in packaging (column 3, lines 32-37). The thickness of each

Art Unit: 1772

layer of the film is essentially the same as the same layer in conventional shrink films. By way of example in a typical film used to make the bag of Figures 1 and 2, the overall film thickness is 2.25 mils. Layers 14 and 18 are 0.4 mil, and layer 16 is 1.45 mils (column 4, lines 60-65).

Newsome does not teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Lai et al. teaches a substantially linear polyethylene that has superior properties to conventional polyethylenes, wherein comparisons are made between their invention and DOWLEX 2054, a conventional LLDPE (see Examples 7-9). They also teach that the polymers of their invention are superior to conventional polyethylene polymers in terms of gloss, haze, dart impact, and clarity (see Examples 10-13). * Lai et al. further teaches that the substantially linear olefin polymers have a melt flow ratio $I_{10} / I_2 \geq 5.63$ and a molecular weight distribution of from about 1.5 to about 2.5, which meets Applicant claimed properties.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used substantially linear olefin polymers of the type taught by Lai et al. in place of the DOWLEX used in the films taught by Newsome, in order to have produced a film having higher gloss, lower haze, and better clarity. The claimed molecular weight distribution of less than 2.5 and a I_{10} / I_2 ratio of about 7 to 12, is well within the teaching of Lai et al.

Although Newsome fails to expressly teach irradiation of the film, it is conventional to cross-link films in order to improve the abrasion resistance of the film. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have

Art Unit: 1772

irradiated the film taught by Newsome in order to have cross-linked the layers and to have improved the abrasion resistance.

It would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

3. Claims 1,2,4-13,15,16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins" Nov. 1991, Plastics Technology, or Van Der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" February 1992.

Newsome has been discussed in the previous paragraph. Newsome does not teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Schut, an Exxon trade journal, teaches a new line of linear low density polyolefins made using homogenous single site metallocene catalysts, wherein the polyolefins have a density of at least 0.90 g/cc. Furthermore, Schut teaches that EXXPOL EXACT-101 has a total impact strength of 107 in.-lb. These polyolefins have physical characteristics far superior to traditional polyolefins produced from conventional Ziegler/Natta catalysis. For example: metallocene

Art Unit: 1772

catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene catalyzed polyolefins are further elaborated in Van der Sanden et al. (Pages 99-100); and they further teach that these polyolefins are a choice material in the production of heat sealable films. Finally, it should be noted that metallocene catalyzed polyolefins (1-butene, 1-hexene, or 1-octene/ethylene copolymers) are commercially available from Dow in the form of "Affinity" or from Exxon in the form of "Exact". As discussed above Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed LLDPE have physical properties far superior to that of analogous LLDPE formed by Ziegler-Natta catalysis.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the commercially available metallocene catalyzed LLDPE of the type taught by Schut or Van der Sanden et al. in the laminate structure of Newsome to have produced a film with superior strength and performance.

Although Newsome fails to expressly teach irradiation of the film, it is conventional to cross-link films in order to improve the abrasion resistance of the film. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have irradiated the film taught by Newsome in order to have cross-linked the layers and to have improved the abrasion resistance.

It would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the

Art Unit: 1772

Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

It would have been obvious to one having ordinary skill in the art in view of the teachings of Schut or Van der Sanden et al. to have arrived at Applicant's claimed invention. Therefore, the claimed "ethylene alpha-olefin copolymer formed by a polymerization reaction in the presence of a single site catalyst, said ethylene alpha-olefin copolymer having a molecular weight distribution of less than 2.5 and a I_{10} / I_2 ratio of about 7 to 12" would have been obvious to one having ordinary skill in the art.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

Response to Arguments

4. Applicant's arguments filed on February 28, 2001 have been fully considered but they are not persuasive.

Applicant's arguments and amendments to the present claims have been carefully considered but do not place the present claims in condition for allowance. In particular the Lai reference specifically teaches the claimed properties recited in the present claims 1 and 12. Furthermore, Lai et al. specifically teaches that the linear olefin polymers are an improvement over that which is conventionally known in the art. Applicant's argument that Lai discloses linear

Art Unit: 1772

olefin polymers having several uses, *i.e.* fibers, films and molded parts, without any teaching or suggestion as to how its linear olefin polymers could be specifically utilized in these various areas is not convincing. Lai et al. specifically teaches the polymer used for a variety of uses, and in combination with the Newsome reference, teaches the claimed invention.

With respect to the rejection under 35 USC 103 over Newsome in view of Schut or Van der Sanden , it is the Examiner's position that the data demonstrated by Applicant does not clearly overcome the rejection. Applicant has not clearly demonstrated for the record a side by side comparison of that which is presently claimed over that which is taught by Schut or Van der Sanden.

Applicant's data has not been presented in a manner in which the Examiner can clearly understand. Applicant refers to a comparison of Dow Affinity resins, also known as Dow DGCT resins and Exxon Exact resins, which are ethylene alpha olefin copolymers formed from a polymerization reaction in the presence of a single site catalyst, as stated. Applicant's declaration is deficient in that it does not disclose why Dow DGCT and Exact are being compared. Is Applicant using Dow DGCT to make the claimed multilayer film? Applicant should disclose what they are comparing with respect to their claimed invention. Are the Van der Sanden or Schut references directed solely to Exact resins? Applicant should specifically state what it is they are comparing, with respect to the applied art of record, in any future filed declarations.

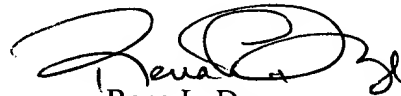
Art Unit: 1772

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Dye whose telephone number is (703) 308-4331.



Rena L. Dye
Primary Examiner
Tech Center 1700

R. Dye
May 7, 2001